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ORIGINAL ARTICLES.

GLASSES ON A CHILD TWO YEARS OLD FOR CONVERGENT STRABISMUS.

BY S. C. AYRES, M.D., CINCINNATI, OHIO.

The adjustment of glasses to cases of convergent strabismus during the intermittent period and before permanent contraction of the internal rectus has taken place is always desirable. But unfortunately such cases are not always seen in the early stages, and when seen are often too young to wear glasses. The efficacy of this treatment is well established and the final result is much better than the operation of tenotomy which was done so indiscriminately some years ago. Experience has taught surgeons that while the primary result was very satisfactory, yet five or ten years later these same cases were found to have a perceptible and even a marked divergence.

The correction of the ametropia and the constant use of glasses has relieved many of these cases from the necessity of an operation. As strabismus often shows itself in the first or second year the wearing of glasses is sometimes a physical im-

possibility. There is a marked difference in tolerance of children for glasses. Some take to them kindly while others refuse them entirely. Danger to the eyes must be taken into consideration.

A remarkable tolerance for glasses came under my observation last summer and as the patient was only a little more than two years old, I deem it worthy of report. The patient was a bright little girl in whom the parents had noticed occasional squint for two or three months but lately it had become more pronounced.

I told the mother that the only way to give relief would be to order glasses for constant use, but I expressed a fear that they would not be tolerated. She agreed to try them and an estimate of the anomaly was made and then glasses were ordered. Two weeks later I saw the little patient and I was told that not only did she wear the glasses willingly, but that as soon as she awoke in the morning she asked for them. They evidently gave her relief and she was not willing to begin the day without them. There was also a marked improvement in the convergence. From a letter received a few days ago I learn that she still wears them (it is now about five months since they were ordered) and that the eyes are parallel I have a good many times ordered glasses for similar cases for children three and four years of age but never before for one so young.

SOME REMARKS ON POST-TYPHOID EYE-AFFECTIONS.[1]

BY ADOLF ALT, M.D.

Affections of the eye after typhus or typhoid fever are but very rarely observed. This scarcity of this occurrence accounts undoubtedly for the fact, that most text-books not even mention such affections. Furthermore, when seen, they have no peculiarities which could be considered as characteristic of the specific typhoid infection; on the contrary they are affections which may be seen occurring from lack of resistance of the general system after exhausting disease.

At the request of your committee I shall give you in the following a short resume of what I can find on this subject in ophthalmological literature, and add to it a few of my own observations.

The largest amount of information regarding the eye-affections under consideration is to be found in Foerster (Graefe and Saemisch, Vol. VIII, 1, p. 167). He enumerates the eye-affections seen after typhoid fever as the following: Abscess and ulcer of the cornea, paresis of the accommodative apparatus, paresis of the sphincter pupiliæ, paralysis of external muscles of the eye, transitory amaurosis and atrophy of one or both optic nerves.

Abscess of the cornea has been described by Saemisch, Arlt, Schweigger, Adler and Œtlinger.

[1]Read before the St. Louis Medical Society during the discussion of the present typhoid fever epidemic in this city, November 5, 1892.

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Henoch saw ptosis and paralysis of the right abducens muscle.

Disturbances of the accommodation and mydriasis have been seen by a number of observers.

Transitory amaurosis, especially after intestinal hæmorrhages, and lasting amaurosis from atrophy of the optic nerve have been more frequently seen, than other affections.

Gowers in his Medical Ophthalmology differentiates between sequelæ following typhus and such which follow typhoid fever. Among the former he mentions loss of sight during convalescence and subsequent atrophy, of one or both optic nerves. He states, however, at the same time that in some of these cases cerebral symptoms, like hemiplegia, accompanied the affections.

After typhoid fever, he again particularly mentions the occurrence of amblyopia and amaurosis. The lasting amaurosis may be due to atrophy of the optic nerve with or without preceding inflammation. In some cases true optic neuritis has been seen during the height of the fever or in the period of reconvalescence. Such observation, however, arouse the grave suspicion, that they were rather cases of meningitis, than of typhoid fever, an error into which more than one diagnostician has fallen.

Galezowski and Snell have seen embolism of the central retinal artery during convalescence from typhoid fever.

Schmidt-Rimpler in his text-book mentions floating opacities in the vitreous humor, the expression of a mild choroiditis or cyclitis, and furthermore symptoms of mild iritis.

It is a strange fact that none of the authors mentions a corneal affection which it has fallen to my lot to see in two instances, namely, keratomalacia, that is total necrosis of the corneal tissue. In both cases the patients were of a very low and uncleanly class who had gone through a severe attack of typhus fever in great poverty and consequently with little or no care. They consulted me during the period of reconvalescence when still very weak and emaciated, and in both of

these cases the whole of one cornea was sloughed away so that the iris lay bare.

I do not consider this dire result, which by proper care could, perhaps, have been prevented any more characteristic of or due to the specific typhoid infection, than the abscesses and ulcers of the cornea seen by other observers. They are undoubtedly due to the almost uninterrupted exposure to atmospheric influences, heat, dust, etc., of a cornea which is sadly deficient in moisture and nutrition, and therefore, belong to the same class of corneal affection which we find resulting from exposure in paralysis of the fifth nerve, paralysis of the orbicularis palpebrarum from facial palsy, in Basedow's disease, etc.

In a number of cases of anæmia of the optic nerve and retina, and of beginning atrophy of the optive nerves, which came under my care, the patients stated that they had first become conscious of a visual deficiency when recovering from typhoid fever. I looked upon these cases as not being due to the specific typhoid virus. They all recovered under tonic treatment, more particularly by subcutaneous injections of strychnine.

Only in one instance, that of a lady in the climacteric period, who came to me when reconvalescent from typhoid fever, did I find a number of peripherically situated patches of plastic choroiditis and opacities of the vitreous. Such on affection is, however, comparatively frequent in females of that age who have not suffered from typhoid fever and is, therefore, not any more characteristic of this disease, than any of the affection mentioned above.

ADDITIONAL OBSERVATIONS.

Since preparing the foregoing I have seen two cases of post-typhoid affection.

One case was that of a child of four years to whom I was called in the third week of an attack of typhus fever. I found

an abscess of the right cornea involving more than one-third of this membrane.

The other case is of more interest and concerns an affection, not mentioned, so far as I know, in literature.

Mrs. L., soon after having been delivered of a child, fell victim to a very severe attack of typhus abdominalis complicated with myositis. In the second week redness and swelling of the right eye was noticed and treated as conjunctivitis. When the eye protruded between the lids and sight was abolished I was called in consultation. I found an orbital cellulitis which slightly pointed above the external rectus. There was at the same time total synechia of the iris and V=0. A deep incision freed about two drachms of pus and the swelling and pain of the right eye readily subsided. At present she sees light and there is a chance of making an artificial pupil of some value in the near future.

In the October, 1892 number of the *Archives d'Ophtalmologie*, Gillet de Grandmont reports a case in which typhoid fever was followed by iritis with hypopyon. He obtained in this case pure cultures of the bacillus of typhoid fever from the pus in the anterior chamber. If this experiment could be successfully repeated, my opinion, that the eye affections after typhoid fever are not due to the specific virus of this disease would be proven fallacious.

SOCIETY PROCEEDINGS.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

FRIDAY, JULY, 8, 1892.

HENRY POWERS, F.R.C.S., President in the Chair.

IMPLANTATION CYST IN THE ANTERIOR CHAMBER AFTER CATARACT EXTRACTION.

Messrs. Richardson Cross and Treacher Collins reported two cases. The first was that of a woman, æt. 64, who had had an uncomplicated extraction of cataract with iridectomy performed on her left eye, and who subsequently could see to read and sew. Seven months after the operation an attack of acute glaucoma came on, and the sight rapidly failed. The eye was excised a year later. Examination of the eyeball, after excision, showed that in the anterior chamber there was a large cyst, lined throughout by laminated epithelium. It was bounded in front by the posterior surface of the cornea, below by the anterior surface of the iris, which curved round it, and behind partly by the lens capsule and partly by the hyaloid of the vitreous. The iris, where it ceased to be in contact with the cyst, was in apposition with the cornea. The angle of the anterior chamber was closed in its entire circumference, a portion of the root of the iris having been left above in the situation of the coloboma. The optic disc was cupped.

The second case was that of a man, æt. 41, who had a cata-

ract extracted from his left eye, with iridectomy. At the conclusion of the operation the anterior chamber was whshed out with a solution of the biniodide of mercury 1 in 25,000. Striated keratitis came on subsequently and persisted. Seven months later a thick opaque membrane filling the coloboma was needled; after this the eye remained painful and blood-shot, the cornea became more hazy, and new blood-vessels developed in it. The eyeball was ultimately excised two years after the extraction. At the pathological examination a cyst was found in the anterior chamber lined by laminated epithelium closely resembling that on the surface of the cornea, the most flattened cells being toward the interior of the cyst.

The cyst was somewhat triangular, one side being in contact with the cornea, another with the iris, and a third with the lens capsule and vitreous.

For the determination of the mode of formation of these cysts, the writers considered it was necessary to ascertain the origin of the laminated epithelium found lining them. Two possible sources suggested themselves:

1. That it was derived from proliferation of the endothelium lining Descemet's membrane, and the anterior surface of the iris.

2. That some of the surface epithelium was carried in at the time of the operation, and had subsequently proliferated.

The latter view seemed the more probable because the epithelium was found on the surface of the lens capsule and the hyaloid of the vitreous, and was not confined to the iris and Descement's membrane, and because epithelium-lined cysts had been produced experimentally in rabbit's eyes by such implantations of surface epithelium. The first case was of additional interest from the fact that the eye became glaucomatous. The cyst, which filled the whole of the coloboma, must have prevented fluids passing through it into the anterior chamber. Consequently the iris became pressed forward into contact with the cornea, and folded round the cyst, very much as it is round a lens when dislocated into the anterior chamber

and blocking the pupil. In this way the whole of the cornea became closed by the periphery of the iris, and the exit of intraocular fluids arrested. The paper was illnstrated by lantern slides.

The President thought it remarkable that cysts from implantation of surface epithelium were not more common after extraction of cataract.

Mr. Hulke said that cysts of the iris had in his experience followed accidental perforating wounds of the eyeball. Their occurrence after operative incisions was comparatively new to him, but he thought that the explanation given by the authors of the paper was probably correct for both classes of cases.

Accidental Vaccinia of the Eyelids.

Mr. Tatham Thompson (Cardiff) communicated notes of the case of a man, æt. 38, whose left eyelids had become accidentally inoculated. The lids were œdematous and painful, and at the outer canthus the edges were involved in a purulent ulcer with indurated margins. There was great tenderness of the affected parts and painful enlargement of the glands at the angle of the jaw and down the sterno-mastoid. The man's child had been vaccinated a short time previously, and his wife had been accidentally inoculated therefrom. The man had suffered from slight marginal blepharitis, with excoriation at the outer canthus, and the inoculation had probably occurred at that point.

A Case of Symmetrical Dacryo-Adenitis.

This case was reported by Mr. Simeon Snell (Sheffield). The patient was a married woman, æt. 36, who came under observation March 22. Ten weeks previously the right eye became inflamed; this was soon followed by a swelling beneath the upper lid, which gradually increased and was accompanied by pain, A similar condition on the left side had begun a week before she came to the hospital. Both lacry-

mal glands were enlarged, hard, and tender to the touch, the right being much more affected than the left. The history threw no light upon the cause of the disease. In spite of the absence of evidence of syphilis, iodide of potassium (five grains) was given three times a day, and was rapidly followed by subsidence of the swelling and other signs. During the time the lacrymal glands were decidedly enlarged, there was an almost complete absence of tears on the right side, and a noticeable diminution in their secretion on the left side.

LIVING AND CARD SPECIMENS.

Mr. Lindsay Johnson: A Modification of Priestley Smith's Perimeter, with Adaptation of Electric Light.

Mr. S. A. Stephenson: A Meridian Delineator.

Mr. Juler: A Case of Optic Neuritis with Retinal Changes.

Mr. Sheppard: A Strabismus Hook with Cutting Edge.

Mr. Tatham Thompsoe: (1) Episcleral Gumma; (2) Rupture of Choroid in Macular Region; (3) Rodent Ulcer of Face, with Hypertrophy of Eyelid; (4) Recurrent Sarcoma in Parotid Region.

Mr. Brailey: Ectropion Following Burn Treated by Transplantation of Skin from the Arm.

Dr. D. J. Wood: Partial Detachment of Retina with Unusual Dilation of Retinal Veins.

ELECTION OF OFFICERS.

The annual meeting of the Society was held after the ordinary meeting and the following officers elected for the ensuing year:

President—Henry Power.

Vice Presidents—James Bankart, Exeter; John Hughlings Jackson, M.D., LL.D., F.R.S.; George Lawson; William M. Ord, M.D.; D. C. Lloyd Owen, Birmingham; Simeon Snell, Sheffield; John Tweedy.

Treasurer—George Cowell.

Secretaries—Charles E. Beevor, M.D.; Gustavus Hartridge.
Librarian—W. Adams Frost.

Other Members of Council—James Anderson, M.D.; F. Richardson Cross, Bristol; James McKenzie Davidson, M.B., Aberdeen; Robert W, Doyne, Oxford; Henry Eales, Birmingham; J. R. Lunn; J. A. Ormerod, M.D.; Herbert William Page; D. D. Redmond, Dublin; W. C. Rockliffe, M.D., Hull; G. H. Savage, M.D.; A. Quarry Silcock.

SELECTIONS.

INFANTILE CATARACT.

BY ALBERT R. BAKER, M. D.. OF CLEVELAND, O.

I selected this subject, not because I had any new facts to communicate, or new operations to propose, or new theories to advance; but because my experience, observation and reading has lead me to believe that, as a rule, we do not treat infantile cataract as successfully and as intelligently as we do many other eye diseases. If I am correct in this supposition, an interchange of ideas on this important subject at this time cannot fail to be of value.

I know of no subject more perplexing to the medical student than the classification of cataracts; they have been classified as to age as congenital, infantile, juvenile and senile, as to consistency as fluid, soft, mixed and hard. They may be capsular or lenticular. Capsular cataracts may be pyramidal, anterior polar, posterior polar, or degenerative. Lenticular cataracts may be nuclear. cortical or zonular. Cataracts have been classified as to cause, as albuminuric, diabetic, traumatic, etc. They may be simple or complicated, primary or secondary, ripe or unripe, mature, immature or hypermature. This list might be continued almost indefinitely, but is sufficient to illustrate the protean forms in which lenticular opacity presents itself to the ophthalmic surgeon, and it is in the child that we find the most remarkable variation, in the cases brought to our notice. It was that prince of ophthalmologists, Mr. George Critchett, in a letter published in the *London Lancet* as long ago as 1855, who said that "Congenital catar-

act deserves very careful notice on account of the numerous aspects it assumes, the frequency with which it is overlooked, the baneful influence it may exert upon the prospects and career of the patients, and the favorable results of suitable treatment. The more we have an opportunity of observing these cases, the more evident does it become that nature revels in variety. Even in her morbid operations, when we fancy that we have exhausted every possible form, some new manifestation presents itself."

For our present purpose it is not necessary to enter into an extended discussion of that much debated question, whether cataract is ever congenital, as it makes little practical difference (although the question may have an etiological value), whether it is present at birth or comes a few hours or days afterward. Dr. Alt[1] saw a case of total lenticular cataract in a baby 24 hours old. The writer saw a milky white lenticular cataract of one eye, other eye normal, in a child 24 days old. The mother and an intelligent nurse said the opacity was present at birth. Granting that cataracts may be congenital, it seems to me more desirable to substitute the term "infantile cataract," so as to include all those occuring in infants and young children. Practically many of these cases do not come under the observation of the oculist until later in life, often being overlooked until 5, 10, and even 15 or 20 years of age.

The most frequent form of infantile cataract is the lamellar or zonular. These cases are not infrequently associated with other congenital defects, the intellectual faculties often being very imperfect. Mr. N. C. McNamara,[2] in his Presidential address to the Ophthalmological Section of the British Medical Association, remarked, in opening the discussion of this subject, that "it was well known that in fœtal life branches of the hyaloid artery covered the posterior surface of the lens, and advanced forward over its margins, helping to form the membrana capsulo-pupillaris. If, from fault in the development

[1]AMERICAN JOURNAL OF OPHTHALMOLOGY, December, 1887.

[2]British Medical Journal, September 12, 1891.

of the eye, this vascular layer persisted after birth, it was apt to give rise to a film of connective tissue, extending to a greater or less extent over the posterior surface of the lens, and so forming a zonular cataract. In some instances a small patch alone was left to mark the spot at which the hyaloid artery had passed on to the lens, in other cases a central opacity existed, with radiating bands stretching toward the periphery of the lens. Microscopical specimens have demonstrated the fact that some of these zonular cataracts consisted of a film of connective tissue, together with remains of the hyaloid artery." This seems to be the most satisfactory explanation yet offered of the pathology of zonular cataracts, and it seems much more rational to attribute the convulsions which have figured so largely in the literature of this subject to the same cause which brought about the development of the lens, the defective mental faculties, and the other bodily defects so frequently seen in these cases. An attempt was made to secure statistics bearing upon the relative frequency of cataracts associated with hare-lip, cleft palate, coloboma of the iris, total absence of iris, spina bifida, etc.; but I could find nothing satisfactory. I regret exceedingly that I have not kept more accurate records of these cases occurring in my own practice, and yet the experience of any one man, unless he had exceptional adventages for observation, would not include enough of these cases to be of much practical value. Upon referring to my case books I find records of only two cases of congenital total absence of the iris, and in both of which cataracts were present. One of these had interstitial keratitis and typical Hutchinson teeth. The other was confined to a penal institution and a confirmed criminal. One lens was partially dislocated, and by throwing his head backward in a peculiar jerky manner he could throw his lens partially back like a door, out of the visual axis, and thus secure a fair amount of useful vision. He said his father's eye had just the same appearance. Of nine cases of coloboma of the iris two had cataract. I have met with two cases of cataract associated with hare-lip,

and one with spina bifida, and a number of cases had Hutchinson teeth.

If time permitted, it would be interesting to consider hereditary influence in the production of zonular cataract. A few years since I was called to operate upon three brothers, aged respectively 11, 21 and 29 years. There was one other son and three daughters in the family whose eyes are normal. The parents were cousins and one grandparent had senile cataract otherwise the family history is good.

Next frequent to the zonular in infants is the anterior polar or pyramidal cataract. Nowithstanding the great diversity of opinion as to the etiology of these capsular cataracts, I have no doubt but that they are nearly all due to a perforation, or at least inflammation, of the cornea. It is not necessary that any corneal opacity should be present. About two years ago a child was presented at my clinic, 2 months old, with a history of having had a very severe attack of ophthalmia neonatorum, with perforation of both corneæ. There was a dense white corneal opacity, including nearly the whole cornea, so that it was impossible to see the pupil of either eye. In the course of a few months the corneal opacities cleared up so that typical anterior polar cataracts could be seen, which were removed by the suction operation. At present there is no corneal opacity, and it would be impossible from any examination to say that there had been a perforation. It is surprising that so accurate an observer as Dr. Alt[3] should not have seen such cases.

Not infrequently the lens undergoes degenerative changes, its fluid constituents become absorbed, leaving behind a tough dense membrane often containing more or less calcareous substance. I have met this condition most frequently in traumatic cases, or in cases which have been operated upon repeatedly by the needle operation. I have come to look upon the usual needle operation as a frequent cause of this condition. How often after needling an infantile cataract several times, have you found the pupil still occluded with the dense white remains of the capsule and shrunken, possibly calcareous lens,

through which you have been able with great difficulty to tear a hole—a poor excuse for a pupil, but you congratulate yourself upon securing even that? This has been my unfortunate experience so frequently that I have almost abandoned the needle operation in cases of zonular as well as pyramidal cataracts. After trying several operations my preference is for the linear extraction combined with the suction operation with Mr. Teale's instrument, in which the suction is made by the mouth of the operator. I have never been able to get a Bowman syringe that I could use so well.

The anterior capsule should be divided in both the vertical and horizontal meridians to the full extent of the dilated pupil, and the lens pretty thoroughly broken up, but avoid perforating the posterior capsule. Keep the pupil well dilated, and in from three to five or six days, possibly seven, make a broad incision at the outer part of the cornea about two or three lines from the sclero-corneal margin, with the keratome. In many cases by partially withdrawing the instrument and pressing it backward, and as the aqueous escapes, the softened lens matter runs out almost of its own accord, the remaining portion, if any, can often be coaxed out with a little stroking of the opposite side of the cornea with the spatula. If there is a hard nucleus it can be delivered in the usual manner. If the papillary area cannot thus be readily cleaned the suction curette can be inserted, and by sweeping it around carefully the remaining cortical substance can be removed. Care should be taken not to injure the iris. In one instance in which I made the incision near the sclera-corneal margin, I had a slight anterior synechia, and the pupil is slightly oval in shape but otherwise there have been no untoward symptoms. Since this accident occurred I have made the incision in the cornea further forward; and the danger of synechia is lessened, and the lens substance removed more easily; mydriatics can be used much more freely so as to keep the pupil well dilated without danger of prolapse. By this method patients are discharged in from two to three weeks, which under the old method would have occupied months, and often valuable time

in the child's education sacrificed. In very young children on account of the difficulty in managing the patient; it may be preferable to resort to the needle operation. In these cases there is not the same necessity of securing useful vision at once, and yet in cases showing a disposition to develop nystagmus, I very much doubt the propriety of wasting time to allow the lens to absorb when it can be removed so easily. The lens, however, is absorbed much more quickly in those cases than in older children. I have followed the rule applicable to senile cataract, and operated but one eye at a time, and have several times questioned the advisability of making an iridectomy, and of permitting the lens to remain in one eye so as to allow of a certain amount of accommodations for near work.

I have under my care now, a bright little boy 6 years of age, whose vision in the left eye was $^{5}/_{cc}$ increased by dilating the pupil to $^{15}/_{cc}$, in the right eye $^{20}/_{cc}$ with pupil dilated increased to $^{20}/_{LXX}$. I removed the lens of left eye by the method detailed above, and secured vision $^{20}/_{xx}$ with + 10 D. Before the operation there was considerable nystagmus which has all disappeared. When the pupil of the right eye is dilated with cocaine he can read Jaeger No. 3, and has considerable amplitude of accommodation, especially for larger type.

I should be pleased to know if any of the members of the Section have had any experience in this direction. Would the amount of accommodation in such an eye be of any practical advantage to the patient, and if so, would it be enough to compensate fot the deformity of an iridectomy?

Would there be any objection to postponing farther operative interference until later in life, when the patient could express an intelligent opinion on the subject?[3]

It has been my custom to recommend operation within the first year. I operated upon one case at two months. There are cases which it may be advisable not to operate upon at all.

A doctor friend of mine has a typical anterior polar catar-

[3]I think Mr. Critchet suggested this procedure many years ago, but I could find no record of cases in which it was practiced.

act of both eyes, so prominent are they, that he always wears colored spectacles when in company, to hide them. He completed a regular collegiate course, graduated in medicine, and is now doing a large general practice.

If operative interference is decided upon, the question is to be answered whether the lens is to be removed or an iridectomy is to be performed.

I have followed the rule laid down by an old instructor, Mr. Streatfield, and removed the lens in all cases in which the vision could not be improved, by suitable correction of refractive errors, with the pupil widely dilated to $^{20}/_{L}$. Practically this rule has left but few cases for iridectomy, and those cases in which I have made this operation have been rather disappointing in results, and in several instances a subsequent removal of the lens became necessary.

In conclusion I will offer the following for your consideration:

1. Infantile cataracts should be operated upon early, within the first year if possible.

2. In pyramidal and zonular cataracts in which vision cannot be improved to $^{20}/_{L}$ after fully dilating the pupil, removal of the lens is to be preferred to iridectomy.

3. Fluid cataracts are best removed at once by linear extraction.

4. Soft cataracts including zonular and capsular, are best treated by first breaking up the lens thoroughly, and removing a few days later, by the combined linear extraction and suction operation.

5. Simple dicission is sufficient in very young infants, unless nystagmus should be present.

6. Only one eye should be operated upon at a time.

7. There are few cases in which it may be advisable to extract one lens for distant vision and make an iridectomy on the other eye, so that a certain amount of accommodation may be preserved for near work.

DISCUSSION.

Dr. B. Alexander Randall, Philadelphia:—The point was raised in the paper in regard to zonular cataract as examined with the microscope, that a portion of the hyaloid artery of the fœtus had been traced into the cataractous zone. This matter has escaped my observation, and is contrary to anything that I have studied in the matter. I would ask if I heard aright. The hyaloid artery with its capsular and papillary net-work is wholly external to the lens-capsule, and I cannot conceive of its having any connection with the opaque laminæ of lens-substance within.

Dr. A. R. Baker, Cleveland, Ohio:—I have presented this paper not so much because I had any new ideas to advance as with the hope of gaining some information upon the points presented. In reply to the question of Dr. Randall, I would say that I am indebted to Macnamara for that point in regard to the remains of the hyaloid artery being present in these cases. He says that microscopically, remains are to be seen in many of these cases.—*Jour. Am. Med. Assoc.*

A CASE OF ACQUIRED ANTERIOR POLAR CATARACT.—REMARKS TO DR. BAKER'S PAPPER, BY ADOLF ALT, M.D.

Referring to a remark in the paper of Dr. Baker concerning my not having observed cases of acquired anterior polar cataract, I wish to state, that within a few weeks I have seen such a case.

J. W., æt. 13, came to consult me about a purulent otitis media in both eyes and stated that I had treated him nine years previously for an eye trouble. My case-book being referred to, I found, that when four years old he was brought to me a pitiful sight of inherited syphilis with parenchymatous

keratitis in both eyes. In the left cornea an abscess developed and perforated while he was under treatment and he slowly recovered. He has now a nubecula of the right cornea and a leucoma of the left one. In both eyes, however, there is a good-sized anterior polar cataract. In the left eye the perforation of the cornea may be blamed for this,—but what is to be blamed for the occurrence of the cataract in the right eye, where no perforation of the cornea took place?

Evidently the development of the anterior polar cataract in in the right eye is not due to any mechanical cause, as may be the case in the left eye. I suppose then that we have here to deal solely with an intra-capsula infllammatory process due to the general disease.

A CASE TOXIC, CENTRAL AMBLYOPIA TERMINATING IN PROGRESSIVE ATROPHY; WITH GENERAL CONSIDERATIONS.[1]

BY ALFRED HINDE, M. D., CHICAGO, ILL.

J. L. G——, aged thirty-eight, Canadian cooper by trade, married, free from venereal infection, has been a beer-drinker to excess for about six years, and would smoke daily from one to two ounces of fine-cut tobacco. During the past two years he has been a great sufferer from dragging pains in different parts of the body. They were "very distressing" in the lower extremities, especially on deep pressure over the posterior surfaces, so that during nine weeks, one year ago, he could not sit down on a chair, and, in order to sleep, he had to rest in the prone position of the body. He had also severe head-pains of the same sudden, pulling, steady character. These pains were worse at night, and markedly intensified after each drinking-bout.

During the periods of most intense pain, for two years past, he has been in the habit of relieving, temporarily, his suffering by the internal and local use of alcohol and water. The pains are least severe in warm weather, and during summer time he needed less alcohol than in the winter months.

There is present a marked tenderness on deep pressure over the large nerve-trunks—sciatic and musculo-spiral. He lacks general nervous tone, and his weight five years ago was one hundred and eighty pounds, but now it is about thirty pounds less. He considers that he has been sexually intemperate during the last five years.

[1]Patient shown and paper read before the Rush Medical College Class, at the Neurological Clinic, February 25, 1892.

About six months since he first noticed that his vision became slightly foggy, and from then until the present this fogginess has become more and more intense, so that now he can see objects somewhat better when not looking directly toward them, or "out of the side of my eye!" With the right eye alone he reads $^{12}/_{cc}$, and with left only $^{19}/_{cc}$, and glasses do not improve vision. With both eyes he reads only No. X. Snellen at five to seventeen inches. All objects are befogged and must be seen at a nearer point, or at a greater angle—hence of larger size—than is required by eyes having normal vision. The external ocular muscles are healthy, and the intra-ocular muscular apparatus is normal so far as the above range of accommodation is concerned. The pupillary reflexes, direct and consentaneous, are quite torpid, whereas the accommodative[2] reflex is present and much more acute than the others. The pupils are of medium size.

The eyeballs have a healthy appearance and the media are clear. The outer halves of the optic papillæ are much paler than the inner, and whiter than normal, and their surfaces are somewhat depressed. The arteries of the retina appear of normal size and color.

The visual fields are found to contain a central area in which objective vision is markedly impaired but not lost. This scotoma is symmetrically situated in each field, is of oval form, involves the macula, and extends horizontally to the blind spot of the optic nerve entrance. Outside of this central amblyopic region the visual field is more nearly normal, until

[2]The impairment of the direct and consentaneous reflexes is most probably due to the anæsthetic condition of the *afferent* optic nerve-portion of the iritic reflex arc, the nuclei of the third nerves, and their trunks, the efferent part of the arc, remaining normal. The presence of the accommodative reflex, an associated movement, is most readily accounted for by the fact that the requisite nerve-stimulus for convergence of the eyeballs through the volitional internal recti muscles necessitates a simultaneous explosion from the nuclei of the avolitional sphincter irides and ciliary muscles, because of the interconnection of the three nuclei in the floor of the third ventricle and the aqueduct of Sylvius. These nuclei constitute almost an independent center with its separate blood-supply, and, together with their branches, as above given, are the active mechanism in the production of the Argyll-Robertson pupil wherever found.

we reach its periphery. The right field is peripherically contracted at its upper and nasal limit. The left field is contrated somewhat at its nasal boundary. His color perception is generally impaired—most for green (appears dark to black), next for red, then yellow, and least for blue—though he makes mistakes in the grouping of shades of all the above colors.

He has noticed that his vision is worse when the eyes are exposed to a bright light, as on sunny days and at mid-day, more than in the morning and evening, or on cloudy days. He sees very slighty better, on testing, with his back to the light, than when the luminous rays strike the eyeballs.

In ascertaining the history of this patient he first said that he was no whiskey-drinker, and yet, with the peripheral pains, the nerve-trunk tenderness, and the marginal limitation of the visual fields, it was difficult to explain the facts by means of nicotine poisoning alone, and beer had an insfficient amount of alcohol to produce them. Only on further questioning did he admit the ingestion of diluted alcohol as an anodyne.

From the foregoing we are led to a diagnosis of central amblyopia dependent upon a toxæmia due to tobacco and alcohol. The case is a severe or advanced one of tobacco-amblyopia with the added factor of a progressive atrophy, as shown by the extensive involvement of the color sense, and the commencing limitaton of the visual field, together with a peripheral alcoholic neuritis, that preceded the eye symptoms, and continued with them.

The amblyopia due to the tobacco is not as much dependent upon the amount of the weed used as upon individual idiosyncrasy. The fine-cut, or shag tobacco of the stronger varieties is the most likely to produce the eye-symptoms. Heredity would seem to play a part, for male smokers in a family have been known to be affected, and in these same families some of the women at the climacteric period have been known to develop optic nerve atrophy. Locality and nationality may affect results, for Hutchinson observed that strong tobacco was the controlling drug in these cases in England, whereas in Ger-

many, Uhthoff[3] found that alcohol played a greater etiological part in the production of "amblyopia."

As might be surmised, the male sex is almost alone in this disease, 4 only were women, and he noticed that persons who learned to smoke with difficulty and those who were especially prone to sea-sickness were frequent cases in his group of central amblyopes supposed to be suffering from tobacco-poisoning.

The affected are usually beyond thirty years of age, and rarely have cases been reported in total abstainers[4] from alcohol, and youths have been known to be the subjects of the disease. Again, save in very advanced cases, the evidence in favor of tobacco, as against alcohol, in the causation of the disease, is supported by the fact of the gradual and often complete recovery of such cases on the withdrawal of tobacco, without other treatment.

It is, however, rare to find cases of central amblyopia in smokers who are water-drinkers. The large majority are persons who have used tobacco and alcohol to excess and who have lived an otherwise depraved life. Yet, the numerous alcohol neurotics of this clinic are generally free from dependent eye-symptoms. After years of observation in these cases, and in a few cases of women drinkers, who are not smokers, yet sufferers from general neuritis, I have yet to see the first case of typical central amblyopia.

This would indicate that the connective-tissue inflammation of the optic nerves is much less frequent than inflammation of the same tissue in the spinal nerve-trunks—which accords with clinical observation.

In chronic alcoholism the cerebral meninges are markedly thickened from connective-tissue proliferation, and the optic nerve-sheaths are but a prolongation of these, with a reduced

[3]Uhthoff (as quoted by Noyes, Diseases of the Eye, p. 618) in one thousand cases of alcoholismus found six per cent affected with "amblyopia," and about thirty per cent of the one thousand cases had eye symptoms of different kinds.

[4]Among others, Noyes (Diseases of the Eye, 1890, p. 619), reports one case in an artist who "never drank wine nor liquor, but smoked constantly."

blood-supply. Because of the greater distance from the central supply of alcohol, and the relatively smaller blood-supply, and, may be, more complete oxidation, of the drug, the less frequent optic neuritis may be partially explained. Yet without the alcoholic soaking of the optic nerve tissues, I believe that tobacco alone would as rarely produce interstitial optic neuritis, as it fails to inflame the other nerves of the body. Nicotine may have predilection for the optic nerves, but these case are most often due to a mixed poisoning.

Again, did we possess the delicacy of exact limitation in the early stage of the spinal nerve neuritis. and know exactly the location in the nerve-trunks of the first-affected fibres, as we do in the optic, there would be little suprise if we learned that the extension of the inflammation spread from the already inflamed sheath first to the outermost fibres of the bundle, as occurs in these optic nerve inflammations.

This probable course would again show the etiological part played by the alcohol, yet we must confess the immunity shown by the comparative rarity of the optic nerve affection, save where tobacco has also been used. The escape of many chronic alcoholics from general neuritis only demonstrates the invulnerability of many persons against the toxic effects of alcohol, a parallel 'to the chronic smokers who escape a central amblyopia. If the early progress of the two forms of neuritis—special sense and ordinary sensory nerve—should be the same, we can the more easily understand the equally favorable early prognosis in both varieties. Both are peripheral neuritides, and the fact that the optic nerve cannot express a pain, but can only flash a light, is the reason for the principal difference in the treatment of the two forms—one cries for an anodyne, the other does not.

Not considering violet, the color having the smallest area of recognition in the normal retina is that of green; then red, yellow, and blue, in order, have larger fields. The impairment of color-preception, in pathological conditions, is first noticeable for green. If the disease progressively occupies a still

larger extent of the nerve or retina, the next color imperfectly recognized would be red, then yellow, and lastly blue.

This general diminution of color-preception, as present in our patient, indicates an extensive involvement of the nerve, and in such a case the optic disk would usually show signs of atrophy, as a rule, occupying its temporal half—also present in our case.

In the early history of central amblyopes, the opthalmoscopic examination is entirely negative, even the optic papilla has a normal appearance. At this period the pupillary reflexes are usually acute, hence the improvement of vision in such cases is marked where the direct light rays are thrown upon the test-types, the eyeballs at the same time being shaded from the intense light. The consequent enlargement of the the pupil permits the excitation of a greater area of the retina by the increased number of ethereal vibrations admitted to the interior of the eyeball. The same improvement in vision follows the use of a weak mydriatic solution that affects the sphincter iridis muscle only.

In some cases the acuity of vision is increased temporarily by the inhalation of the fumes of nitrite of amyl to its physiological effect, and it may be used to aid in the rapid, differential diagnosis between cases largely functional and those severer ones where atrophic change has supervened. Increased flow of blood to the optic tissues, from the occipital cortex to the macula, most probably causes the momentary stimulation of the still intact nerve elements.

These much-debated cases are not freed from discussion when their morbid anatomy is considered. The pathology of central amblyopia, as already outlined, is that of the other toxæmias,[5] viz., a peripheral interstitial neuritis. The anatomical explanation for the central scotomata is that of retro-bulbar affection of the optic nerve fibres that are distributed to the central area of the retina, at first a specifically localized

[5]The uræmic amaurosis, rarely seen, and usually after convulsions in kidney disease, rapidly developed into complete, but usually transient, blindness, has a central origin, and does not require our attention here.

disease of the optic nerves within the orbit. The exact location, in the optic nerves, of the nerve fibres supplied to the macular region, and between the latter and the papilla, and to the peripapillary portion of the retina—the seat of the central scotomata—is that of the outermost parts of the optic nerve-trunk next to its sheath. An inflammation of the sheath of the optic nerves with its extension to the connective-tissue partitons, esperially of the peripheral temporal portion of the nerves, would readily account for the phenomena of these interesting cases. The diseased portion would include about one-third of the optic nerve fibres, and is most probably at first entirely a functional impairment due to exudative cause, followed at a later period, if the etiological conditions persist, by a pressure atrophy of the nerve fibres, and still later, in some cases, by progressive inflammation with subsequent atrophy of other portions or the optic nerves, with the usual increase of connective-tissue elements.

Some observers have regarded these case as due to an interstitial neuritis of the axial fibres of the optic nerves. Some consider, and with these we agree, that the fibres of the papillo-macular regions only occupy the central portion of the optic nerves behind the orbit, but that within the latter, and as we approach the eyeball, they lie nearest to the sheath and largely on the temporal side of the nerve; whereas, it is known that the axial fibres within the orbit are spread out in the anterior portions of the retinal expansion, and these parts are not included in the early period of central amblyopia. In our patient, however, they are involved, hence the case has passed beyond a pure one of central scotomata to that of progressive affection of the optic nerves, and renders the prognosis graver, because of the probability of serious, progressive, and permanent, but not necessarily complete, blindness. In this patient, we were asked for the immediate anatomical limitation of the disease that would explain atrophy of the temporal halves of the papillæ, the central scotomata, together with marginal or peripheral nasal and superior contraction of the visual fields, we would reply that, after the initial inflammation of the optic

nerve-sheaths the disease extended especially to the distal temporal portion the peripheral fibres of the optic nerves, and that the interstitial neuritis, with its base outward and its angle inward toward the centre or axis of the optic nerves, has now reached the axial fibres, and these being affected explain the peripheral contraction of the inner and the upper margins of the visual field; in short, more or less definitely wedge-shaped neuritis, with the widest part next the temporal portion of the sheath and its apex at the centre of the optic nerve-trunk, and situated immediately behind the eyeballs.

The prognosis in these cases depends upon the chronicity of the disease, the willingness of the patient to entirely forego his bad habits, for many of these cases, as Mackenzie said, "would rather smoke than see," and, we may add, would rather carouse than live. Again, the presence or absence of atrophic signs in the papillæ or the presence of a marginal scotoma, modifies the future outlook. The prognosis is favorable in first and recent attacks with slight central impairment of vision and where the bad habits are discontinued. When relapses have occurred, there is a possibility of the disease passing into a progressive atrophy with permanent, incomplete, or may be absolute, blindness.

In the early stages of the affection, with simple complaint of a slighty foggy vision, the central scotomata may be overlooked unless great care is exercised in the examination of the visual fields. Even at this period, however, the color perception is diminished in the area of the scotomata before there is much loss of the acuteness of vision. This is generally the case in all retinal or nerve disease followed by atrophy, and it is an important fact to be remembered in the observation of all such cases, and in doubtful ones the color sense ought to be carefully tested—small color objects being used in preference to large ones. In cases of early simple central scotomata the area of diminished, or lost color-preception is sharply defined, whereas in cases of progressive scotomata with atrophy resulting there is a zone of color uncertainty between the lost and normal fields. Moreover, in the progressive atrophies there is

present, sooner or later, marginal, and often concentric limitations of the visual fields. Also, in these cases, the temporal halves of the disks are obviously atrophic, as seen by their tendon-like appearance, and their evident depression below the level of the surrounding retina. It must be remembered that the typical central scotoma is always bilateral, and, at the commencement, never an area of lost but only of diminished vision. Paracentral scotomata have also been observed, either together with or independently of the central form.

The etiological indication is our guide to treat of central amblyopia, and applies to all forms of toxæmic neuritis. To restore the functional integrity of the nerve tissues and to limit further progress of the disease, stop entirely the introduction of both poisons—alcohol and nicotine—into the system, if both are used, or if only one is taken, see that it is interdicted. Restore the normal nervous tone by a carefully regulated life, good hygiene, fresh air, tonics, and a nutrtious and easily-digestible diet. Iodide of potassium is an useful drug in these cases, epecially where active ocular symptoms are present, vision improving, with a reduction of the hyperæmia and irritation. Dry cupping, or blistering the temples, together with a guarded general derivation by skin, bowels, and kidneys, is also followed by good results in non-debilitated patients.

For the more chronic cases with apparently permanent blindness, as well as for the general peripheral neuritis, the subcutaneous or internal use of strychnia is advisable. For the spinal neurotic pains the aromatic series of analgesics are to be recommended. Gentle galvanization of the eyes and extremities is followed by good result.—*Medical Record.*

NEWS.

THE PAN-AMERICAN MEDICAL CONGRESS.

Our readers well know by this time that the first Pan-American Medical Congress will be held in Washington, D. C., September 5, 6, 7 and 8, 1393.

The vast deal of preliminary work which such an occasion requires is steadily and satisfactorily advancing toward completion. A preliminary announcement sent out a short time ago by the able Secretary-General shows that the list of the different Sections complete and an array of brilliant names among the number of honorary presidents.

There is no doubt, that, the work being put into such able hands, the Congress will turn out to be a great success.

The needful thing, however, as in all such undertakings. is money. Dr. A. M. Owen, 507 Upper First St., Evansville, Ind., the Treasurer of the Congress is even now ready and has been for some time, to receive the registration fee, amounting to $10.00, from all who intend to become members of the Congress. We gladly lend our help to this object in bringing it before our ever liberal readers. Remember the Treasurer now—and have a valuable paper ready for the Congress!

TRANSPLANTATION OF AN EYELID.

The following case is reported by Douthwaite (*N. Y. Med. Jour.*): A Corean official had lost part of the lower eyelid, and prevailed upon a slave for a consideration, to furnish his

own eyelid for transplantation. Both men were chloroformed and the margin of the official's eyelid was prepared first by scraping and then making a deep slit along its whole length. The lower lid of the slave was then seized and its margin slit off in a wedge-like piece, which was quickly inserted into the slit prepared for it in the other eyelid and adjusted by means of fine sutures. It was then washed with a 1-to-1000 bichloride solution and a pad of antiseptic lint was applied. On the second day the circulation was fully established in the transplanted tissue and the eyelid looked natural. On the third day everething was doing as well as could be desired, but that night, while half asleep, his eye feeling somewhat uncomfortable, the patient gave it a vigorous rubbing with his hand, which completely ruined the work that had been done. Douthwaite believes that with the observation of greater care the operation would probably have proved successful.

THE FAMOUS OCULIST, DR. HIRSCHBERG, of Germany, who recently arrived in the Empire, was received with open-hand welcome by many of his old students. He is now staying at Nikko, but as soon as he returns to Tokyo, all the eminent physicians of the city will be ready to invite him to a grand banquet which is now being prepared.—*The Sei-i-Kwai Medical Journal, Tokyo, Japan.*